Efficacy of Advance Directives in a General Hospital

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Summary

A review of medical charts of all deaths for one year at a general acute care hospital reveals that 135/602 (22%) charts indicate that the patient had an advance directive. In 68/135 (50%) of the cases, the patients were unable to participate in decisions and met the conditions of the advance directive. In 33/68 (49%) of those cases the records indicate that the advance directive influenced care. In 63 of the 135 charts the advance directive was present and chart notations indicate an additional 25 advance directives were located at the physician's office. Eighteen of a total of 44 physicians listed as attending accounted for the 33 cases in which the record indicates that the advance directive was recognized. Twelve of these 135 patients were coded during their hospitalization. Three of the 12 were coded in the ER upon admission, the remaining 9 were coded in the course of their care in the acute care hospital. Regarding code status a three tiered (Cat I, II, III) classification system was in place. Initial classification of the 135 patients upon admission was: 64 "full code" (I), 56 were "all but CPR" (II), 15 were "No code" (III). Code classification at the time of death (or discharge) was: I =45, II=53, III=36.

Objective.—To investigate the extent to which advance directives influence clinical care of patients during the final acute hospitalizations.

Design.—Retrospective chart review.

Setting.—General Hospital of 274 beds.

Patients.—602 death charts reviewed, 135 contained indications or the execution of an advance directive.

Main Outcome Measures.—The 1995 medical records of 602 deaths were reviewed for evidence of influence of advance directives in clinical care.

Results.—24% of patients who had advance directives in the chart or at the physicians office had their directives recognized during their final hospitalization. In 68/135 (50%) of the cases the conditions to activate the advance directive were met. And in 33/68 (49%) of those cases the advanced directive was invoked. There was some, but less than expected correlation between advanced directives and DNR orders. In a three tiered Code Category Classification system (Cat. I, full code, Cat. II Chemical Code, Cat. III, No Code.) the initial classifications in the 135 cases with evidence of advance directives were Cat. I 47%, Cat. II 42%, and Cat. III 11%. Compared to 59 cases where there was no indication of an advance directive the classifications were Cat. I 67%, Cat. II 26% and Cat. III 7 %. However, the classifications in the two groups at the time of death of the patients were Cat. I 34% & 31%, Cat. II 39% & 39% and Cat. III 27% & 30%. There was a 20% increased incidence of an initial classification of full code in the cases without indication of an advance directive. But once the patient care involved review of code status, the final classifications of patients were the same irrespective of the presence of an advance directive.

Conclusions.—In 50% or 68/135 of the cases the patient met the conditions for invocation of the advance directive and in 33 or 49% of those cases the advance directive was invoked. Another way to state the impact of advance directives in the population studied is that in 22% of the 602 deaths there was indication of an advance directive and in 50% of those cases the directive became relevant and in 49% of those cases it had a bearing on the care (or in 5% of the 602 deaths studied). More research is needed to determine why advance directives are not utilized more and why they to do not have greater effect on clinical care decisions in terminal patients. But problems with making them available to relevant parties, hospital record keeping, and physician recognition of their significance are evident.

Introduction

Our society affirms the right of self-determination in health care decisions. Competent patients can extend their right to when they have lost decisional capacity through the use of advance directives (i.e., livings wills or L.W. durable powers of attorney for health care or DPA). In 1991 a nationwide Gallup poll reported that 75% of Americans approved of living wills and by 1994 all states and the District of Columbia had legislation recognizing some type of advance directive. Advance directives have been identified and promoted as instruments which can best ensure that one's wishes regarding medical treatment will be followed after one has lost decisional capacity.[1-5] They have gained favor because they promote self-determination, are a guard against unwanted and often futile medical interventions that only prolong the dying process, and they relieve anxiety about loss of control and the burdens that fall on others during a final hospitalization. This study suggests that despite legislation which give advance directives standing as a legal means for patients to provide health care decision makers with an expression of their wishes, their performative force is recognized much less than thought. [1-5, 9]

While advance directives have been promoted as the patient's best instrument to ensure congruence between their wishes and the aggressiveness of care at the end of the patient's life, recently there have been indications that they are not as efficacious as thought.[6-8] This study explores the efficacy of advance directives in a general

acute care hospital in 1995. In 1990 the Patient Self-determination Act was implemented with the intent to identify patients entering acute or long term care facilities who had executed an advance directive and to encourage competent adults who had not to do so.[13] The completion of an advance directive is only the first step, which by itself will do little to ensure that a patient's wishes will have a bearing on clinical practice. Advance directives are a form of communication, and as such, they can fail in innumerable ways. They not only must be executed, placed in the hands of the relevant parties in order to be recognized, honored and have an affect on clinical practice, but also, the conditions which they describe must obtain in order for them to be invoked. Our study indicates that in only 5% of the patients who died in 1995 at the hospital studied had an advance directive which affected their care.

Table 1.—Documentation of previously executed advance directive in hospital charts of 135 cases where some indicator was positive*

	Yes	NO
AD present in chart	63	72
Florescent Orange Sticker	45	90
Cover Sheet	22	113
Admitting Form Ad-1 **	82	14

Present in chart	With Family	in MD Office
10	25	25

*Most cases had multiple indicators of the previous execution of an advance directive.
**Some of the intake sheets indicated the presence of an advanced directive in the chart, but it was not present.

Methods

The medical charts of all patients who died in 1995 from a 274 bed general acute care hospital were reviewed for indication of a previously executed advance directive. The author reviewed a total of 602 death charts. The charts were reviewed to determine whether there was any indication of a previously executed advance directive. If no indication of an advance directive was found in the most recent admission, the previous admissions up to one year were reviewed for any indications of an advance directive. Indications of an advance directive were found in 135 charts. Those charts were reviewed further for demographic data, diagnosis upon admission, type of admission, length of stay, cause of death, whether Coded, Code Category, presence of advance directive(s), type of advance directive(s), any notation about the advance directive (i.e., nurse, physician, social worker), any notation indicating the patient's capacity to make decisions, physician(s), and number and type of consultations. A member of the medical records department also reviewed 28/135 charts to check for accuracy and verify the data collected. *(Tana Basa, R.N., Medical Records Clerk)*

The criteria used to determine whether and to what extent advance directives influenced the course of care included: 1) chart progress notes documenting discussions between designated proxies and physicians regarding treatment, 2) chart progress notes and consent forms documenting consent by designated proxies for tests and procedures, 3) chart notes regarding discussion of "Code status" (DNR) with designated proxies , 4) chart notes regarding decisions to withhold or withdraw care, 5) any reference in the chart to an advance directive, including remarks by consultants, social workers, nurses notes, etc.. 6) certification that the patient's condition met the conditions described in the advance directive (as required by the law). The meeting of any one of these was considered evidence that the advanced directive influenced treatment decisions.

Demographic data was obtained from the charts regarding patient age, gender, marital status, ethnicity, and type of advance directive (living will or durable power of attorney). The patient's admitting diagnosis, diagnoses at death, type of admission (emergency or elective), length of stay, code category classification, performance of cardiopulmonary resuscitation, and number of physicians involved in the case (consultants) was also obtained.

Results

Of the 602 death charts for 1995 there was indication that an advance directive (AD) was executed in 135 cases. Indication that the patient had an advance directive was found in a variety of places in the chart and in most cases there were multiple indications. Every possible combination of the following indicators was found: 1) two entries on the cover (face) sheet which indicates yes/no whether the patient has a durable powers of attorney (DPA) and whether the patient has a living will (LW), 2) the admission or intake sheet (Ad-1) addresses whether the patient has an advance directive, if yes, what type, and it asks for the location, 3) the chart cover may have had a florescent orange sticker, in a few cases the cover sheet had a sticker, 4) the advance directive was in the file. See Table #1.

The most common situation was the intake sheet would say "yes" and the advance directive was in the chart. Second most common, only the intake sheet would say "yes" and no other indication of an advance directive was found. As I indicated every possible combination of circumstances was found except one (no case where the only indication of an advance directive was an orange sticker). Several charts were found with an orange sticker but no advance directive. One conclusion to draw from such disparate empirical data is that unless one was searching for an indication of the execution of an advance directive it could easily be overlooked. This is because the cover sheet, the most evident document, was the least reliable indicator. It indicated an advance directive in only 13% of the cases that had other indications of the execution of an advance directive. The intake sheet, on the other hand was reliable 61% of the time, but this form is buried deep in the chart, has little relevance to patient care, and is rarely looked at. The orange sticker was found on 43 of the 63 charts where an advance directive was present and on 4 in which there was no advance directive. The advance directive was present in 63 charts but it was not displayed in the appropriate place (prominently on the top left side) in 14 of those records (22%). It should also be noted that 6 general powers of attorney were mistakenly identified in the record as advance directives for health care decisions.

Interviews were conducted with hospital staff from Medical Records, Admission Intake interviewers, and nursing supervisors in order to understand the generation, development deployment and utilization of medical charts (how they are compiled, arranged, managed, and provide for the trained eye - case histories) . The charts in the medical records archives are what is left of the "hard empirical record" and one sees very quickly the need for caution (or

Table 2.—Characteristics of 135 patients who had previously executed an advance directive

	Number	Percent
Gender		
Male	77	57%
Female	59	43%
Ethnicity		
Caucasian	47	35%
Japanese-American	60	44%
Filipino	7	5%
Hawaiian	2	1%
Portuguese	9	7%
Undetermined	11	26%
Age (years)		
60 <	8	6%
60 -74	49	35%
75 - 84	44	33%
85	35	26%
unknown	1	
Type of Advance Directive		
Living Will only	80	60%
Durable Power of Attorney only	16	12%
Both LW and DPA	37	27%
Other*		

*These were cases of Jehovah's Witnesses' Medical Directive

Table 3.—Clinical Information about 135 patients with documentation of prior execution of an advance directive

Type of Admission	Emergency 9		Elective/Acute 126	
Diagnosis	At Admission		Cause of Death	
Cardiopulmonary disease	44	33%	40	30%
Respiratory disease	21	16%	16	12%
Digestive system disease	15	11%	9	6%
Malignant neoplasm (Cancer)	46	34%	27	20%
Renal disease	32	24%	20	15%
Sepsis, infection, pneumonia	25	19%	20	15%
Stroke, Brain Bleed, Coma	27	20%	18	13%
Diabetic Complications	15	11%	7	5%
Did not die in hospital (Other)	na		35	26%
Length of Stay				
0 - 7	63			
8 - 14	26			
15 - 30	23			
30	8			
Other*	15			
Cardiopulmonary resuscitation performed	Yes		No	
	12		123	
Number of physicians and consultants involved (data from 64 cases)				
1 - 2	33	51%		
3 - 4	15	24%		
> 4	16	25%		
Code Category	First classification		Classification at time of death	
Category I	64	47%	45	34%
Category II	56	42%	53	39%
Category III	14	11%	36	27%
Patient Died	at home		in hospital	
	35		100	

* cases where death was 30+ days after discharge and/or date of death cannot be determined from the chart.

at least reserve) in the inferences we make based only on the records.

Demographic data regarding the patient age, gender, ethnicity, and type of advance directive in those cases where the chart indicated that the patient had a directive is found on Table 2. The average age of the patients with indication of an advance directive was 77 years (range, 38 to 102). 57% of the patients with advance directives were male and 79% were either Japanese-Americans or Caucasians. The living will was most common form of advance directive (present in 60% of the cases). Whereas 12% had a durable power of attorney for health care only, and 27% had executed both a living will and a durable power of attorney.

Much of the information found on Table 3 gives an indication of the seriousness of the patient's health problems. The diagnosis of patients at admission and the cause of death were invariably multiple. Most patients had three or more problems and retrospectively we know 115/135 (85%) died during or within 30 days of their last hospitalization. Hospitalizations lasting two weeks or less constituted 67% of the cases with nearly 50% of patients dying within one week.

The code classification of these patients is of interest given that they all have indications of execution of advance directives and have serious multiple system disease. Briefly, the classification system can be identified as follows: category I = "full code", category II = "chemical code" or all but CPR, category III = "no code". If the physician does not place a patient in a category, the patient is a category I by default. In 47% of the cases patients were initially "full code" by default while at the time of death 34% remained "full code". In these cases where the patient remained full code, it was not possible from the record to determine whether the code status was ever addressed by the physician. The majority of classification changes from category I to category II or III took place within a day of the patient's death. At the time of death 73% of these patients would, according to hospital policy, have had a "code" called if the classifications were adhered to and they had arrested in the presence of hospital staff . This information raises questions about the timeliness of addressing code classification in these cases of patients with advance directives. When compared to a group of 59 cases where there was no evidence of an advance directive there was a significant difference in the initial classification of category I 67%, but the classifications at the time of death were virtually the same as the group with advance directives.

Twelve of the 135 were coded, 3 in the ER and the other 9 during their hospitalization. In three of the 9 cases where the patient was coded during their hospitalization the advance directive was present in the chart and in two of those cases the patient was coded more than once.

Table 4 reveals that there was a 20% decrease in the incidence of an initial full code classification in the cases with an indication of the execution of an advance directive. If the directive was present in the record the decrease was 27% and in those cases where the advance directive was invoked the decrease in initial full code classification was 55%. As seen in this data there is a relationship between advance directives and the initial code classification. The more evident the advance directive is the less likely that the patient will have a initial code classification of "full code". However, when one looks at code status at the time of death (Table 5) there is no significant difference in the classifications in any of the groups except for the 33 cases where the physicians has explicitly invoked

Table 4.—Initial code classification in five different groups of cases.

Code category	59 cases with no indication of AD at all	135 cases with indication of AD	53 cases with indication of AD but not present	83 cases with AD present	33 cases where the AD was invoked
Category I "full code"	67%	47%	58%	40%	12%
Category II "chemical code"	26%	42%	36%	46%	67%
Category III "no code"	7%	11%	6%	14%	21%

Table 5.—Code classification at death in five different groups of cases.

Code category	59 cases with no indication of AD at all	135 cases with indication of AD	53 cases with indication of AD but not present	83 cases with AD present	33 cases where the AD was invoked
Category I "full code"	31%	34%	39%	31%	3%
Category II "chemical code"	39%	39%	37%	40%	55%
Category III "no code"	30%	27%	24%	29%	42%

the advanced directive.

Based on the information in the charts, 67/135 patients who had previously executed an advance directive never reached a condition where their advance directive could be invoked. These patients were either competent, did not die in the hospital, or died in the ER and thereby the initial conditions of the advance directive were not met and hence it was proper that it was not invoked. In the remaining 68 cases these patients reached a point during their care where they did not have decisional capacity and met the conditions of their advance directives. In 33/68 or 48% of cases where the patient could not participate in health care decisions, the record indicated that the advance directives were recognized and influenced care. In 35/68 (52%) of these cases there was no indication that the advance directive was recognized. The records in these cases document consent of family members for invasive diagnostic or therapeutic procedures, code classification, family conferences regarding care plans, and withholding or withdrawal of medical care. In all these cases decision making was not by the patient's officially appointed proxy and/or did not refer to the living will despite the fact that the conditions of which the advanced directive presumably had been fulfilled. These cases included aggressive care which was not in accord with the advance directives including (CPR, tube feeding, surgery, etc.). In the 33/68 (48%) of the cases without decisional capacity the charts contained documentation recognizing the advance directives, appointed proxies were referred to in notes, and references were made to family conferences. However, of note is that fact that in none of these 33 cases did the chart contain the legislatively required certification by two physicians that the patient's condition met the activating conditions of the advance directive.

Commentary

This study raises serious questions about the efficacy of advance directives as a way to influence clinical care. Even when patients lose decisional capacity there remains the following problems: will the advance directive be in the chart? If so, will it be in the correct place, or recognized for what it is? If acknowledged will the conditions described match the patient's condition? Will doctors take the advance directive seriously even if all conditions are met? Or will they instead be concerned primarily with the views and wishes of family members? In discussions with physicians about this study we find that most take the views of the family members to be more relevant than advance directives. The behavior of most physicians involved in the study suggests that they are unlikely to consider the relevance of the advance directive unless they are asked to by family members. Despite their legal standing it is the rare physician in this study who will follow an advance directive if it is not in accord with the view of family members. Ethically and legally such a position is indefensible, however pragmatically the lesson is that those who want there advance directive to direct clinical care must take pains to obtain family and physician support of their directives.

Even if the many problems concerning availability and accuracy of advance directives in patient records were overcome and physicians took a more supportive view about advance directives, in 50% of the cases the advance directive would not have a bearing on clinical decisions. So then, when we realize that only 24% of this population had evidence of advance directives and only half of them would under optimum conditions have had a bearing on care, claims for the value of advance directives seem over stated.

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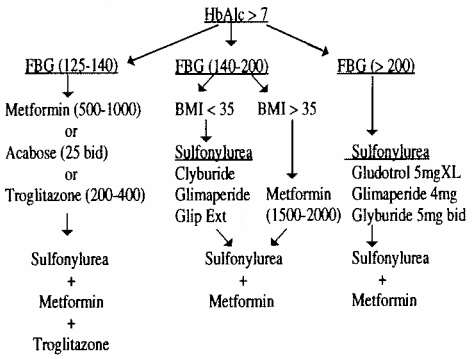
- Glimaperide (Amaryl): metabolized by liver entirely; kidney not involved; long acting 24 hrs; Dose: 1 mg; 4mg, 8mg; lowers HbAlc.
- Metformin: lowers HbAlc 1-1/2 - 2%; wtg loss and lowers BP; GI side effects in 5% of population esp at doses over 2000mg; renal excretion; avoid use with serum creatinine above 1.3; no effect on pp hyperglycemia.
- Acarbose (Precose): safe; controls pp glucose; frequent dosing; flatulance 20-30%.
- Troglitazone (Rezulin): lowers serum insulin levels by 40%; lowers lipid; lowers FBS; lowers pp glucose; given in combination with insulin; 600mg lowers HbAlc 1-1/2%; standard dose 400mg; insulin rescue.

Cost Analysis

	Lowers HbAlc%	Dose	Cost/mo
Sulfonylurea			
Glyburide	1.5	5mg bid	$15
Glimaperide	1.5	4 mg	$20
Glip Extended	1.5	5 mg	$10
Metformin	1.5	800mg bid	$45
Acarbose	0.75	50mg bid	$40
Troglitazone	0.75		$180

Clinical Algorithm



After starting Drug Therapy:

Check HbAlc q 4 - 6 months striving for 7.0 or lower. Expect secondary failures within 5 years. Watch other cardiovascular goals:

BP 130/85 or lower
LDL 100 or lower
ASA 325mg/d

- **Acarbose** (For moderate FBG + high HBAlc)
  Dose:
  25mg (1/2 50mg) with breakfast 4 weeks
  25mg c breakfast & dinner 4 weeks
  25mg tid ac 4 weeks
  50mg tid ac if necessary

- **Metformin**
  Dose:
  500mg for 4 weeks
  500mg bid for 4 weeks
  500mg tid for 4 weeks
  850mg bid or tid

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There's No Excuse for Domestic Violence